

ABSTRACT

A method of assembling a part to a workpiece with a combination tool supported on a robot, where a mounting surface of the part is assembled on a target surface of the workpiece including the following steps. (a) Indexing to the assembly position. (b) Picking a part with the part gripper on the part delivery arm from a part supply station. (c) Indexing part delivery and workpiece preparation arms to the preparation position. (d) Simultaneously: engaging the part mounting surface with the part surface preparation module; and engaging the workpiece target surface preparation module with the target surface. (e) Indexing to the assembly position. (f) Using the previously set tool operating axis and calculated tool offsets, engaging the prepared part mounting surface with the prepared workpiece target surface. (g) Releasing the part gripper and withdrawing the tool from the part/workpiece assembly.